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Caleb J. Ashley* (ashley.cj@gmail.com). *Discreteness Algorithms: A Case Study*.

Historically discreteness algorithms have been considered within several broader mathematical paradigms: the *discreteness problem*, the construction and deformation of *geometric structures* and notions of *automata* for groups. In this talk we describe a handful of theorems which comprise a case study for interpreting algorithms for discreteness with respect to each of these paradigms. One result in our case study is an algorithm to determine whether or not a subgroup of $PSL(2, R)$ generated by three parabolic transformations is discrete. (Received September 02, 2019)